Abstract of the Disclosure

Integrated circuits are generally built layer by layer on a substrate. One technique for forming layers is chemical vapor deposition (CVD.) This technique injects gases through a gas-dispersion fixture, such as a showerhead, into a chamber. The gases react and blanket a substrate in the chamber with a layer of material. One method of promoting uniform layer thickness is to coat the gas-dispersion fixture with a uniform layer of the material before using the fixture for deposition on the substrate. However, conventional fixture-coating techniques yield uneven or poorly adherent coatings. Accordingly, the inventor devised new methods for coating these fixtures. One exemplary method heats a fixture to a temperature greater than its temperature during normal deposition and then passes one or more gases through the fixture to form a coating on it. The greater conditioning temperature improves evenness and adhesion of the fixture coating, which, in turn, produces higher quality layers in integrated circuits.

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